

Amendments

In accordance with 37 CFR §1.121, please amend the above-identified application as set forth below.

Amendments to the Specification: Please replace the third paragraph of the Detailed Description, appearing at page 10, line 18 to page 11, line 13, with the following replacement paragraph:

(The slat dispensing station 30 of the pallet assembly device 28 of the first depicted embodiment generally comprises a receiving bin or magazine 38 that is formed of a plurality of opposed vertical side ~~wall~~ wall members 40 that are mounted to a horizontal surface 42. The side wall members 40 are spaced apart from each other such that a slot 44 is formed that has a width slightly larger than the width of the slats 24 being used to form the stingers 22 of the block-style pallets 20. A vertical end wall 46 is preferably mounted to a pair of the side wall members 40 in a manner such that it substantially closes the slot 44 at one end. However, the end wall 46 is mounted to the side wall members 40 in a manner such that it is spaced above the horizontal surface 42 by a distance greater than the thickness of each of the slats 24 but less than twice such thickness. The opposite ends 50 of the side wall members 40 remain open and are preferably flared apart. The pair of side ~~wall~~ wall members 40 and the end wall 46 are preferably secured to each other and to the horizontal surface 42 using bolts passed through slotted holes so as to allow the width of the slot 44 and the height of the opening 48 to be adjusted to accommodate various alternative sizes of slats 24. A roll pin 52 is preferably mounted to the horizontal surface 42 adjacent the open end of the slot 44. Finally, an elongated slot 54 extends through the horizontal surface 42 along the length of the slot 44 of the receiving bin 38 to accommodate a portion of the slat conveying mechanism 36 of the pallet assembly device 28, as described below.

Please replace the sixth paragraph of the Detailed Description, appearing at page 12, line 19 to page 13, line 12, with the following replacement paragraph:

The slat conveying mechanism 36 of the block stringer assembly device 28 of the first depicted embodiment includes portions of the slat dispensing station 30 and the clamping station 34. In particular, the horizontal surface 42 of the slat dispensing station 30 and the lower base plate 70 and side plate 72 of the clamping station 34 act as bearing surfaces along which individual slats 24 travel when being conveyed by the slat conveying mechanism 36. The slat conveying mechanism 36 also comprises among other things, a cylinder 76, two parallel rows of guide wheels 78, and a slat position sensor 80. As seen in Figure 3, the cylinder 76 of the slat conveying mechanism 36 is positioned beneath the horizontal surface 42 of the slat dispensing station 30. The cylinder 76 is connected to a tooth member 82 that extends upwardly through the elongated slot 54 of the horizontal surface 42 and slightly into the slot 44 of the receiving bin 38 and is configured to selectively move the tooth member back and forth horizontally along ~~The~~ the elongated slot. This assembly is an individual slat driver. One or more sensors 84 may also be provided to identify when the tooth member reaches limit positions relative to the elongated slot 54, so as to prevent damage to the components of the pallet assembly device 28 and to reverse the direction of the cylinder's 76 operation.

Please replace the eighth paragraph of the Detailed Description, appearing at page 14, lines 2 through 12, with the following replacement paragraph:

The block conveying mechanism 37 of the pallet assembly device 28 of the first depicted embodiment comprises another cylinder 100 and a plurality of sensors 102. Like the other depicted cylinders, the cylinder 100 of the block conveying mechanism is pneumatic. The piston is connected to the block dispensing station 32 and is configured and adapted to move a pushing

ram 104 horizontally back and forth over the block holder surface 58. As the pushing ram 104 moves in response to the piston 100, the pushing ram 104 passes back and forth beneath the bar members 60 of the block holder through the opening 64 at the base thereof. The sensors 102 are mounted where they can identify the position of the pushing ram 104, so as to limit the travel of the cylinder 100, thereby preventing damage to the pallet assembly device 28 by stopping or reversing the direction of the cylinder's operation.

Please replace the ninth paragraph of the Detailed Description, appearing at page 14, line 13 to page 15, line 5, with the following replacement paragraph:

In addition to the components discussed above, the block stringer assembly device 28 also comprises various elements such as a base frame 106 formed of welded square tubing and an electronic control unit (not shown) for controlling the operation of the various above-mentioned components. The base frame 106 supports and physically connects the various stations of the pallet assembly device 28 and comprises several adjustment clamps 108. The base frame 106 generally holds the slat dispensing station 30 in a fixed orientation relative to the clamping station 34 and in a manner such that the horizontal surface 42 of the slat dispensing relative to the lower base plate 70 of the clamping station. At least one of the clamps 108 of the base frame 106 is configured to lock the first beam 90 of the slat conveying mechanism 36 in a given position. The block dispensing station 32, the block conveying mechanism 37, and the second beam 92, drive wheels 88, drive belts 96, and electric motor 98 of the slat conveying mechanism 36 are all preferably fixed in position relative to each other as a unit ~~buy~~ but are also horizontally adjustable relative to the base frame 106. A hand operated crank 110 facilitates such adjustments and the unit can be locked in a particular position via use of the adjustable clamps 108.

Please replace the fourteenth paragraph of the Detailed Description, appearing at page 16, line 21 to page 17, line 7, with the following replacement paragraph:

The control unit also triggers the electric motor 98 of the slat conveying or driving mechanism 36 to cause the drive wheels 88 to begin rotating via the drive belts 96. This preferably occurs simultaneously with activation of the cylinder 76, or shortly thereafter. As the slat 24 being moved by the cylinder 76 progresses toward the clamping station 34, it eventually engages between the ~~Idler~~ idler wheels 86 and the driving wheels 88 of the slat conveying mechanism 36. When this occurs, movement of the slat 24 is taken over by the rotation of the drive wheels 88 and the drive wheels 88 then continue to move the slat along the lower base plate 70 of the clamping station 34. As the slat 24 continues to move, it eventually triggers the slat position sensor 80 that, in response, sends a signal to the control unit.

Please replace the seventeenth paragraph of the Detailed Description, appearing at page 18, line 14 to page 19, line 2, with the following replacement paragraph:

With the upper horizontal plate 68 of the clamping station 34 biasing the block 26 downward against the slat 24 and the pushing ram 104 biasing the block horizontally against the side plate 72 of the clamping station 34 to maintain the block in its preconfigured location as shown in Figure 7, the control unit activates the automatic fastening device to force a fastener upwardly through the fastener slot 74 of the lower base plate 70 of the clamping station and into the slat and block. The fastener secures the block 26 and slat 24 together and, thereafter, the control unit then activates the cylinders 66, 100 to unclamp the block 26 and slat 24 by raising the upper horizontal plate 68 of the clamping station 34 and moving the pushing ram 104 away from the side plate 72. As the pushing ram 104 returns to its original position, it passes out from

under the block holder member 56 and allows the remaining blocks being held by the block holder member to drop down onto the block holder surface 58.

Please replace the twenty-first paragraph of the Detailed Description, appearing at page 20, lines 3 through 5, with the following replacement paragraph:

A second ~~depicted~~ embodiment of the block attacher, 310, depicted in Figures 11-21, is built around an assembly deck 312 having an assembly station 314, a separate stapling station 316 and an ejection station 318.

Please replace the twenty-third paragraph of the Detailed Description, appearing at page 20, line 9 to page 21, line 2, with the following replacement paragraph:

Slat dispenser 320 is comprised of a magazine 322A and 322B and a first dispensing actuator 324 and a second dispensing actuator 326. In the depicted embodiment, these actuators are pneumatically driven. Alternative designs considered to be within the scope of the present invention may be driven hydraulically, by solenoids, mechanically or otherwise. A stack of slats is placed in the magazine manually. The first dispensing actuator 324 drives a thin plate that is horizontally oriented and narrower in its vertical dimension than the slats. When actuated, this thin plate (not shown) pushes the bottom slat in the magazine retrograde to the direction of its assembly travel, which is to the right in ~~figure~~ Figure 11. The magazine has two floor components (not shown) beneath which is a gap 328 tall enough to allow one board to pass but not two. Actuation of the first dispensing actuator pushes the thin plate to the right in ~~figure 1~~ Figure 11, causing the lead end of the bottom slat to drop off of the partial floor of the magazine. The trailing end of the bottom slat remains supported by the other partial floor of the magazine

under magazine component 322B. After the first dispensing actuator has fired, the second dispensing actuator 326 extends another thin plate (not shown) to push the trailing end of the slat off the partial floor in magazine component 322B so that the entire slat falls onto the deck 312, and, more particularly, onto vertical chain 330. Accordingly, individual slats are dispensed so that individual stringers will be assembled.

Please replace the twenty-eighth paragraph of the Detailed Description, appearing at page 23, lines 4 through 9, with the following replacement paragraph:

In an analogous manner, a second block dispenser or short block insertion device 370 includes a push rod 372, push rod actuator 374, short block insertion ramp 375, magazine 376 and magazine drive chain 378. Their operation is equivalent to that of the long block insertion assembly 360. However, the short block assembly device 370 installed the short blocks when the slats are at the subsequent selected position, which are not shown in ~~figure~~ Figure 11.

Please replace the twenty-eighth paragraph of the Detailed Description, appearing at page 23, lines 10 through 16, with the following replacement paragraph:

It should be noted that ~~figure~~ Figure 11 is schematic, in the sense of the interaction and assembly configuration of long block insertion device 360 and short block insertion device 370. Although both installation ramps 365 and 375 are on a plane with deck 312, the push rods 362 and 372, and push rod actuators 364 and 374 are staggered or otherwise offset from one another so that the long block installation device push rod 362 does not obstruct or interfere with short block assembly device 370. This may be achieved in a variety of ways, including that depicted and described below.

Please replace the thirty-fourth paragraph of the Detailed Description, appearing at page 24, lines 13 through 19, with the following replacement paragraph:

Slat dimensions have become standardized at five or eight inches wide and ½ inches tall. Length may be 36, 48 or 60 inches. Of course, it is within the scope of the present invention that slat and block dimensions be variable. However, because of the standard sizes typically used in warehouses, the fixtures on the chain are spaced accordingly. On vertical chain 330, fixtures ~~331~~ 346 and 348 (as seen in ~~figure 2~~ Figure 20) are spaced every 65 inches apart. On the horizontal chain, when configured to ~~assembly~~ assemble 36 inch long block slat assemblies, each fixture set is separated by 40 inches.

Please replace the thirty-ninth paragraph of the Detailed Description, appearing at page 25, line 22 to page 26, line 3, with the following replacement paragraph:

In a first position, a slat at assembly station 314 is stopped with the leading edge of the slat and fixture 348A across from long block insertion ramp 365. The same first position stop will position at attaching station 316 a first long block of the preceding block/slat assembly. The stringer stops with its first long block just above stapler 384 and below pressure actuator 382. A third stringer will be in ejection station 318.

Please replace the forty-third paragraph of the Detailed Description, appearing at page 27, lines 1 through 10, with the following replacement paragraph:

At this fourth position, the processor signals the clutch to disengage the motor 350 and the drive train stops again. At this fourth position, the second long block (fourth block overall) is stapled to the slat located in attachment station 316 completing that stringer. In this fourth position, the slat located in block installation station 314 is now aligned such that fixture 348C is positioned to receive a second short block (third block overall) from short block installation ramp 375. Also in this position, long block installation ramp 365 (which is separated from short block installation ramp 375 by 12 inches) is aligned with the final fixture 346. Simultaneously with the installation of the second short block against fixture 348C at this fourth position, the final long block is installed by long block installation device 360 against fixture 346.

Please replace the forty-sixth paragraph of the Detailed Description, appearing at page 27, lines 19 through 23, with the following replacement paragraph:

Not shown in the figures 11 - 18, for clarity purposes, is a series of biasing springs 392 associated with each fixture on the horizontal chain. These biasing springs 392 are depicted in ~~figure 20~~ Figure 21. They are oriented at a 45 degree angle to push newly received blocks, long or short, against each fixture such that the block is held against the horizontal chain 340 and back against the fixture.

Please replace the forty-seventh paragraph of the Detailed Description, appearing at page 28, lines 1 through 4, with the following replacement paragraph:

Occasionally, a warehouseman will order block/slat assemblies with the blocks variably spaced. This can be achieved with the block attacher of the present invention in multiple ways. The position fixtures may be manually reattached elsewhere on the horizontal chain 340.

Please replace the forty-eighth paragraph of the Detailed Description, appearing at page 28, lines 7 through 13, with the following replacement paragraph:

The assembly station 314 is served by the block dispensers or installation apparatuses 360 and 370, which are assembled with the block magazines 366 and 376 in ~~figures~~ Figures 17 and 18. Figures 17 and 18 depict a somewhat different version of the block installers than depicted in ~~figure~~ Figure 11. In ~~figures~~ Figures 17 and 18 the actuator cylinders 364 and 374 operate within housings 363 and 373 in order to actuate two push rods per installer, push rod pair 362 and push rod pair 372. The push rods then push a panel or extension face 365 and 375 towards the assembly station 314.

Please replace the fifty-second paragraph of the Detailed Description, appearing at page 29, line 20 to page 30, line 9, with the following replacement paragraph:

Figure ~~[[19]]~~ 20 is a close up of one embodiment of the fixtures used to propel a slat and the properly positioned blocks on the slat for attachment. In the depicted embodiment, fixtures 346 and 348 are attached to the horizontal chain 340. Fixture 348A is dimensioned to receive and maintain placement a long block. Similarly, fixture 346A is dimensioned to position a long block. Between fixtures 348A and 346A are fixtures 348B and 348C which are dimensioned to hold in the proper position short blocks. Fixtures 348A, 348B and 348C are dimensioned such that they do not engage the slat, but rather pass over it during the rotation of chain 340. Fixture

346, however, is designed to both hold in position a final long block and engage for driving the slat onto its blocks will be attached. In the depicted embodiment, these fixtures are separate components. Fixture 346A holds in position a final long block. Fixture 346B engages a slat by having a vertical extent sufficient to put the fixture in the plane of the slat. In alternative embodiments, such as that suggested in ~~figure~~ Figure 11, fixture 346 may be a single member.

Please replace the fifty-third paragraph of the Detailed Description, appearing at page 30, lines 10 through 13, with the following replacement paragraph:

Figure ~~[[20]]~~ 21 depicts biasing springs 392. These springs are designed to engage and bias into position the blocks in their proper position against the fixtures 348 and 346 and maintain those proper positions at least until the stapler 384 has fixedly attached them to the slat.